**Co-taught Math Lesson-Melissa Lyford**

**Content Area:** Mathematics **Grade Level:** 7 **Timeline:** 2 days

**NGSSS**

**MA.7.A.1.2**: Solve percent problems, including problems involving discounts, simple interest, taxes, tips, and percent of increase or decrease

**Access Points**

**MA.7.A.1.In.b:** Identify that a higher percent represents a larger quantity or amount in real-world problems.

**MA.7.A.1.Su.b:** Identify that percent discounts reduce the price of goods in real-world situations

**MA.7.A.1.Pa.b:** Identify that percent discounts reduce the price of goods in real-world situations

**Objectives**

Students will solve real word problems involving percent discounts.

Students will calculate percent discount and amount of savings.

Students will calculate the percentages of a given number.

**Prior Knowledge**

* add, subtract, multiply and divide whole numbers and decimals
* know rules for working in cooperative learning groups
* understand consumer vocabulary
* calculate percentage of a number
* log-in to their penda learning accounts and locate assigned activity
* use a calculator
* estimate cost with a percentage discount

**Materials**

Green, red, blue and orange index cards with students’ names, exit questions and Cooperative group role printed on them; 5 computers; teacher made coupons for electronic items such as, I-pods, cell phones, video games, TVs, etc.; sale flyers from electronics stores; response clickers; Smart Board; projector; Textbook; index cards for Day 2 Exit questions; I-pod w/song; paper; pencils; visual schedule; timer; transition signal

**Motivation**

Play “If I had a Million Dollars” on an I-Pod. Explain to students that very few people have a million dollars and electronics are expensive. Explain the importance of researching prices and looking for sales on big ticket items.

**Activities**

***Anchor Activity-***Five problems are on the Smart Board for students to complete as they are waiting for the class to begin. The problems are a review of the previously taught skill of writing equivalent fractions, decimals and percentages.

***Whole Group Instruction-*** The teacher plays song on I-pod, shows the students her I-pod and tells the students that they will be going on a shopping spree for electronics. Explain to students that very few people have a million dollars and electronics are expensive. Explain the importance of researching prices and looking for sales on big ticket items. Prior to beginning the activity the teacher does a quick vocabulary review and assessment. The teacher post multiple choice vocabulary questions on the Smart Board and students use clickers to select the correct answers. On day 2, after the group activities, each group will discuss what they purchased and the strategies they used to get the most for their money.

***Group 1 and 2***-*Cooperative Learning Activity-Shopping Spree*: Teachers assign students to heterogeneous groups of five students and each student is given an index card that is one of four colors. On each card a specific role has been assigned by the teacher. The roles are: Accountant, Reporter, Estimator, Solver and Calculator. Groups are given a budget of $500.00 dollars, circulars from a variety of electronics stores, and preprinted coupons for percentage discounts on specific items. Each group is to buy as many items as they can with their budget and try to buy more than the other group. After both groups have completed the activity, they will compare purchases with the other group to determine who got the best deal.

Definition of roles:

* Accountant-This person is the group leader who makes sure the group members understand the direction and provides corrective feedback. The accountant also checks the final receipt to make sure all of the calculations are correct and the team stayed within their budget.
* Reporter-This person reads all the info in the flyers manages the coupons and checks to make sure the coupons are used in the most cost effective way. This person will also do the final report to the other group.
* Estimator-When an item is selected and matched with a coupon, this person estimates the cost with the percent discount.
* Solver- This person writes and solves the problem to see if the estimation was close and to get the answer.
* Calculator-This person uses a calculator to check the answer.

***Group 3***

*Blue and Red Groups:* The ESE teacher provides direct instruction to reteach solving percent of numbers problems found in textbook. The teacher will model, provide guided practice with corrective feedback and then have students solve problems independently.

*Green and Orange Groups:* The general education teacher provides direct instruction for solving consumer math word problems found in textbook. The teacher will model the following steps for solving word problems: read, reread, think, solve, check. She will then provide guided practice with corrective feedback and finally she will have students solve problems independently.

***Group 4***-Students log in to their Penda Learning Account, select the Advanced, Intermediate or Foundation activity on percentage assigned by the teacher. If the students complete the assigned activity before the group rotation, they can do a Penda Learning activity of their choice.

***Exit Questions***

* Day 1-Students will solve different story problems, based on their skill level, written on the back of their colored index card.
* Day 2-Students will answer a reflection question about their learning over the past two days.

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| **Schedule and Teacher Roles: Day 1** | | | |
| **Time** | **Activity** | **General Education Teacher** | **ESE Teacher** |
| 5 minutes | Anchor Activity | Greets students and walks around the room assisting individual students as needed | Greets students and walks around the room assisting individual students as needed |
| 15 minutes | Whole Group Instruction | Leads whole group instruction | Walks around the room and checks for understanding of directions and provides immediate corrective feedback for students who are struggling with the vocabulary. |
| 20 minutes | Group 1(Green) and Group 2(Orange)-Cooperative Learning Activity: Shopping Spree | Assists Cooperative Learning Groups and students using the computers | Leads small group instruction for blue group. |
| Group 2 (Blue)-Direct Instruction |
| Group 3 (Red)- Penda Learning on the Computer |
| 20 minutes | Group 1(Green) and Group 2(Orange)-Cooperative Learning Activity: Shopping Spree | Assists Cooperative Learning Groups and students using the computers | Leads small group instruction for red group. |
| Group 2 (Red)-Direct Instruction |
| Group 3 (Blue)- Penda Learning on the Computer |
| 5 minutes | Exit Questions | Collects exit cards at the door. | Read questions to students who have an accommodation that requires math questions be read to them. |

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| **Schedule and Teacher Roles: Day 2** | | | |
| **Schedule** | **Activity** | **General Education Teacher** | **ESE Teacher** |
| 5 minutes | Five problems on Smart Board for students to copy and solve as they enter the classroom and wait for the bell to ring | Greets students and walks around the room assisting individual students as needed | Greets students and walks around the room assisting individual students as needed |
| 5 minutes | Whole Group Instruction | Leads whole group instruction | Walks around the room and checks for understanding of directions and provides immediate corrective feedback for students who are struggling with the vocabulary. |
| 20 minutes | Group 1(Blue) and Group 2(Red)-Cooperative Learning Activity: Shopping Spree | Leads Small Group Instruction for orange group | Assists Cooperative Learning to make sure they understand the directions and monitors their progress assisting only if needed. This teacher also monitors students working on the computer |
| Group 2(Orange)-Direct Instruction |
| Group 3 (Green)-Penda Learning on the Computer |
| 20 minutes | Group 1(Blue) and Group 2(Red)-Cooperative Learning Activity: Shopping Spree | Leads Small Group Instruction for green group | Assists Cooperative Learning to make sure they understand the directions and monitors their progress assisting only if needed. This teacher also monitors students working on the computer |
| Group 2(Green)-Direct Instruction |
| Group 3 (Orange)-Penda Learning on the Computer |
| 10 minutes | Group Discussion | Observe and guide discussion as needed | Observe and guide discussion as needed |
| 5 minutes | Exit Questions | Collects exit cards at the door. | Reads questions to students who have an accommodation that requires math questions be read to them. |

**Extensions**

Students can create a school store and have weekly discounts. The students will have to decide which items to discount and by how much to make sure that the store continues to make a profit.

**Assessment**

The assessment for this lesson includes the vocabulary activity with the response clicker, teacher observation and exit questions. The Penda Learning program also provides data that will be reviewed to monitor student progress.

**Accommodations/Modifications**

* 100s grids to show percentages
* use of a glossary of terms
* use of a calculator in the cooperative groups
* simplified word problems
* calculate percentages that are multiples of ten
* use the foundation level on Penda Learning
* have word problems read aloud
* have directions repeated
* have a visual schedule and a timer so they know when to transition to the next activity
* 2 minute warning prior to activity change
* Audible and visual signal at transition

**ELL students**

* include story problems with items, locations and names representative of other cultures
* provide definitions for unfamiliar words
* use of a glossary of terms